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ABSTRACT

In a semiconductor photo-detecting element (an avalanche photodiode), a high-sensitivity element is obtained by incorporating a multiplication layer having high-performance multiplication characteristics. By using a structure which reduces an electric field applied to an etching stopper layer, it is possible to use a multiplication layer having higher-performance multiplication characteristics (a multiplication layer which performs multiplication with a high electric field). The first method to realize this is to use a conductivity type multiplication layer. The second method is to use a structure in which a field buffer layer of the second conductivity type is incorporated. As a result of the use of these methods, a structure which applies an electric field lower than the multiplier electrical field to the etching stopper layer is obtained.